

I hereby certify that on November 17, 1999, which is the date I am signing this certificate, I am depositing this correspondence the United States Postal Service, first class mail, in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231

*Jessica S. Brown*  
 Jessica S. Brown

**PATENT**

Applicant: SVENSSON, Lars G. et al.

Serial No.: 09/389,841

Filed: September 3, 1999

Title: POWER-EFFICIENT, PULSED  
 DRIVING OF CAPACITIVE LOADS TO  
 CONTROLLABLE VOLTAGE LEVELS

Examiner: Not known

Group Art Unit: Not known

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Commissioner of Patents and Trademarks  
 Washington, D.C. 20231

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS  
 37 C.F.R 1.9(f) and 1.27(d)) — NONPROFIT ORGANIZATION**

I hereby state that I am an official empowered to act on behalf of the nonprofit organization identified below:

Name of Nonprofit Organization: University of Southern California  
 Address of Nonprofit Organization: Office of Patent and Copyright Administration  
 3716 South Hope Street, Suite 313  
 Los Angeles, California 90007-4344

**Type of Nonprofit Organization**

- ☒ University of Other Institution of Higher Education
- ☐ Tax Exempt Under Internal Revenue service Code (26 USC 501(a) and 501(c)(3))
- ☐ Nonprofit Scientific or Educational Under Statute of State of the United States of America

(Name of State \_\_\_\_\_)  
 (Citation of Statute \_\_\_\_\_)

- ☐ Would Qualify as Tax Exempt Under Internal Revenue Service Code (26 USC 501(a) and 501(c)(3)), if Located in the United States of America

- ☐ Would Qualify as Nonprofit Scientific or Educational Under Statute of State of the United States of America if Located in the United States of America  
(Name of State \_\_\_\_\_)  
(Citation of Statute \_\_\_\_\_)

I hereby state that the nonprofit organization identified above qualifies as a nonprofit organization, as defined in 37 CFR 1.9(e), for purposes of paying reduced fees to the United States Patent and Trademark Office under Sections 41(a) and (b) of Title 35, United States Code, with regard to the invention described in

- ☐ the specification filed herewith, with title as listed above.  
☒ the application identified above.  
☐ the patent identified above.

I hereby state that rights under contract or law have been conveyed to, and remain with, the nonprofit organization, with regard to the above-identified invention.

If the rights held by nonprofit organization are not exclusive, each individual, concern or organization having rights to the invention is listed below and no rights to the invention are held by any person, other than the inventor, who would not qualify as a an independent inventor under 37 C.F.R. § 1.9(c), if that person made the invention, or by any concern that would not qualify as a small business concern under 37 C.F.R. § 1.9(d) or a non-profit organization under 37 C.F.R. § 1.9(e).

Each such person, concern or organization having any rights in the invention is listed below:

- ☐ No such person, concern, or organization exists.  
☒ Each such person, concern or organization is listed below.

Name BTG International Inc.

Address 2000 Renaissance Boulevard, Gulph Mills, PA 19406

- ☐ Individual      ☒ Small Business Concern      ☐ Nonprofit Organization

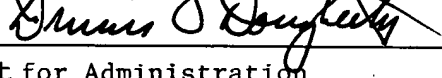
Name \_\_\_\_\_

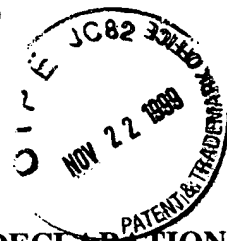
Address \_\_\_\_\_

- ☐ Individual      ☐ Small Business Concern      ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Person Signing Dennis F. Dougherty   
Title in Organization Senior Vice President for Administration  
Address of Person Signing 3716 South Hope Street, Suite 313, For  
Los Angeles, California 90007



#3

Docket No. 18036-12

## DECLARATION AND PETITION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names.

We believe we are the original, first, and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled POWER-EFFICIENT, PULSED DRIVING OF CAPACITIVE LOADS TO CONTROLLABLE VOLTAGE LEVELS, the specification of which was filed September 3, 1999.

We hereby state that we have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application of which priority is claimed.

### PRIOR FOREIGN APPLICATION(S)

| Number | Country | Filing Date | Priority Claimed? |
|--------|---------|-------------|-------------------|
| NONE   |         |             |                   |

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

| Application Serial No. | Filing Date | Status |
|------------------------|-------------|--------|
| NONE                   |             |        |

### PRIOR U.S. PROVISIONAL APPLICATIONS

We hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

**PROVISIONAL APPLICATION NUMBER**60/099,120  
60/143,665**FILING DATE**September 3, 1998  
July 14, 1999

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**PLEASE SEND ALL CORRESPONDENCE TO:****OPPENHEIMER WOLFF & DONNELLY LLP**

2029 Century Park East, 38th Floor  
Los Angeles, California 90067  
Telephone (310) 788-5000  
Fax (310) 788-5100  
**Attn: Marc E. Brown, Esq.**  
Direct Telephone: (310) 788-5032

Wherefore We pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, and we hereby subscribe our names to the foregoing specification and claims, declaration and this petition.

**Full name of first inventor** Lars G. SVENSSON

Inventor's signature \_\_\_\_\_ Date \_\_\_\_\_

Residence Sten Sureg. 36 7 Tr., S 412 52 Gothenburg, SwedenCitizenship SwedenPost Office Address Sten Sureg. 36 7 Tr., S 412 52 Gothenburg, Sweden**Full name of second inventor** William C. ATHASInventor's signature William C. Athas Date 11/15/1999Residence 437 Camino de las Colinas, Redondo Beach, California 90277 U.S.A.Citizenship U.S.A.Post Office Address: 437 Camino de las Colinas, Redondo Beach, California 90277 U.S.A.**Full name of third inventor** Rajat K. LAL

Inventor's signature \_\_\_\_\_ Date \_\_\_\_\_

Residence: 6150 Canterbury Drive, Apt. 213, Culver City, California 90230 U.S.A.Citizenship IndiaPost Office Address: 6150 Canterbury Drive, Apt. 213, Culver City, California 90230 U.S.A.

## ASSIGNMENT

WHEREAS, WE, Lars G. SVENSSON, William C. ATHAS and Rajat K. LAL, the undersigned inventors (ASSIGNORS), have invented POWER-EFFICIENT, PULSED DRIVING OF CAPACITIVE LOADS TO CONTROLLABLE VOLTAGE LEVELS, for which we filed two provisional applications: (1) U.S. Provisional Application Serial No. 60/143,665, entitled A MECHANISM FOR POWER-EFFICIENT, PULSED DRIVING OF CAPACITIVE LOADS TO CONTROLLABLE VOLTAGE LEVELS, filed July 14, 1999, and (2) U.S. Provisional Application Serial No. 60/099,120, entitled POWER-EFFICIENT, PULSED DRIVING OF CAPACITIVE LOADS TO CONTROLLABLE VOLTAGE LEVELS, filed September 3, 1998, as well as an application for letters patent of the United States filed on September 3, 1999, Serial No. 09/398,841;

WHEREAS, THE UNIVERSITY OF SOUTHERN CALIFORNIA (ASSIGNEE) is a not-for-profit corporation organized and existing under the laws of California, its Patent and Copyright Administration Office having a place of business at 3716 South Hope Street, Suite 313, Los Angeles, California 90007-4344. ASSIGNEE desires to acquire and has acquired the entire right, title and interest in and to the inventions, applications and letters patent to be granted and issued for the inventions and applications;

NOW, THEREFORE, for valuable consideration, the receipt and legal sufficiency of all of which we acknowledge, we, the ASSIGNORS, have assigned and do hereby sell, assign, transfer and set over unto the ASSIGNEE, its successors and assigns, the entire right, title and interest:

in and to the inventions thereon,

in and to the provisional applications disclosing the inventions,

in and to the application for letters patent thereon,

in and to applications pertaining to or based upon the inventions and applications, including divisional and continuing applications and continuations-in-part,

in and to any and all letters patent which may be granted and issued on the inventions and applications, or any of them, not only for, to and in the United States of America, its territories and possessions, but for, to and in all foreign countries, together with and including all priority rights based upon any and all applications in the United States of America covered by this Assignment, and

in and to any right to sue for past infringement of the inventions, improvements, applications and letters patent.

We agree that we will, at the request of the ASSIGNEE, execute any and all applications for letters patent for the inventions and any and all other papers and documents and do all other and further lawful acts that the ASSIGNEE may deem necessary or desirable to obtain letters patent on the inventions, to secure the grant of such letters patent and to perfect and vest in the ASSIGNEE the entire right, title and interest in the inventions, applications and letters patent.

We authorize and empower the ASSIGNEE, its successors and assigns, to apply for and obtain, in its or their own names, letters patent for the the inventions before competent

International Authorities including the World Intellectual Property Organization and in any and all foreign countries in which applications for letters patent can be so made or letters patent so obtained.

Dated: Oct 11, 1999

Lars Svensson  
 Name: Lars G. SVENSSON  
 Address: Sten Sureg. 36 7 Tr.,  
 S 412 52 Gothenburg, Sweden

WITNESSED BY:

Dated: Oct 11, 1999

Hans Lindkvist  
 Name: Hans Lindkvist  
 Address: Illionsgändan 5  
SE-224-72 LUND  
 Country: Sweden

Dated: \_\_\_\_\_, 1999

\_\_\_\_\_  
 Name: William C. ATHAS  
 Address: 437 Camino de las Colinas  
 Redondo Beach, California 90277

STATE OF California )  
 ) ss.  
 COUNTY OF Los Angeles )

On \_\_\_\_\_, 1999 personally appeared William C. ATHAS, ☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
 Notary Public

(SEAL)

Dated: \_\_\_\_\_, 1999

\_\_\_\_\_  
Name: Rajat K. LAL  
Address: 6150 Camperbury Drive, Apt. 213  
Culver City, California 90231

STATE OF California        )  
                                  ) ss.  
COUNTY OF Los Angeles    )

On \_\_\_\_\_, 1999 personally appeared Rajat K. LAL, ☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
Notary Public

(SEAL)



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NOW, THEREFORE, for valuable consideration, the receipt and legal sufficiency of all of which we acknowledge, we, the ASSIGNORS, have assigned and do hereby sell, assign, transfer and set over unto the ASSIGNEE, its successors and assigns; the entire right, title and interest:

in and to the inventions thereon,

in and to the provisional applications disclosing the inventions,

in and to the application for letters patent thereon,

in and to applications pertaining to or based upon the inventions and applications, including divisional and continuing applications and continuations<sup>in-part</sup>,

in and to any and all letters patent which may be granted and issued on the inventions and applications, or any of them, not only for, to and in the United States of America, its territories and possessions, but for, to and in all foreign countries, together with and including all priority rights based upon any and all applications in the United States of America covered by this Assignment, and

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all foreign countries in which applications for letters patent can be so made or letters patent so obtained.

Dated: \_\_\_\_\_, 1999

Name: Lars G. SVENSSON  
Address: Sten Sureg. 36 7 Tr.,  
S 412 52 Gothenburg, Sweden

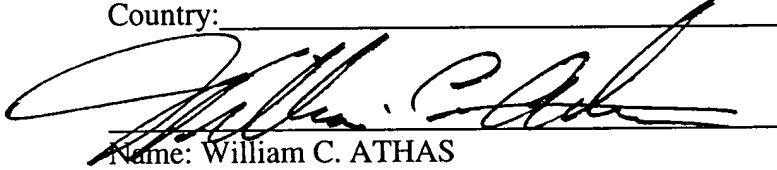
WITNESSED BY:

Dated: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Country: \_\_\_\_\_

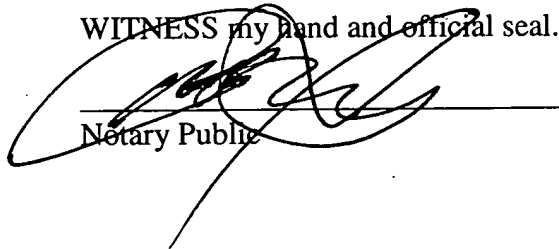
Dated: 11/15, 1999

  
Name: William C. ATHAS  
Address: 437 Camino de las Colinas  
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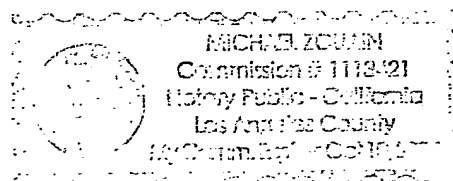
STATE OF California) ) ss.  
COUNTY OF Los Angeles )

On Nov. 15, 1999 personally appeared William C. ATHAS, ☐ personally known to me or ☒ proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he she/they executed the same in his her/their authorized capacity(ies), and that by his her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

  
Notary Public

(SEAL)



Dated: \_\_\_\_\_, 1999

\_\_\_\_\_  
Name: Rajat K. LAL  
Address: 6150 Canterbury Drive, Apt. 213  
Culver City, California 90230

STATE OF California) ) ss.  
COUNTY OF Los Angeles )

On \_\_\_\_\_, 1999 personally appeared Rajat K. LAL, ☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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\_\_\_\_\_  
Notary Public

(SEAL)

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in and to the application for letters patent thereon,

in and to applications pertaining to or based upon the inventions and applications, including divisional and continuing applications and continuations-in-part,

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Dated: \_\_\_\_\_, 1999

\_\_\_\_\_  
Name: Lars G. SVENSSON  
Address: Sten Sureg. 36 7 Tr.,  
S 412 52 Gothenburg, Sweden

WITNESSED BY:

Dated: \_\_\_\_\_

\_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Country: \_\_\_\_\_

Dated: \_\_\_\_\_, 1999

\_\_\_\_\_  
Name: William C. ATHAS  
Address: 437 Camino de las Colinas  
Redondo Beach, California 90277

STATE OF California) ) ss.  
COUNTY OF Los Angeles )

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WITNESS my hand and official seal.

\_\_\_\_\_  
Notary Public

(SEAL)

Dated: 10/21, 1999

*[Signature]*  
Name: Rajat K. LAL

Address: 6150 Canterbury Drive, Apt. 213  
Culver City, California 90230

STATE OF California)

) ss.

COUNTY OF Los Angeles )

On 10/21, 1999 personally appeared Rajat K. LAL, ☐ personally known to me or ☒ proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

*[Signature]*  
Notary Public

(SEAL)

